

# Exhibit A

**UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF NEW YORK**

XINUOS, INC.,

*Plaintiff,*

-against-

INTERNATIONAL BUSINESS MACHINES  
CORP. and RED HAT, INC.,

*Defendants.*

Case No. 7:22-cv-09777-CS-VR

Judge Cathy S. Seibel

**DECLARATION OF RONALD ALEPIN IN OPPOSITION TO THE LETTER BRIEF OF  
PLAINTIFF XINUOS, INC. REGARDING REQUEST TO COMPEL PRODUCTION OF  
DEFENDANTS' SOURCE CODE REPOSITORIES**

I, Ronald Alepin, hereby declares as follows:

1. I am an independent consultant, specializing in issues that involve computer technology and the law.
2. I began my career as an operating systems developer and later software architect for mainframe computer systems. Since the mid-1980s, I have served as a consultant in several software litigation proceedings, including as: Fujitsu's principal consultant in its litigation over interface information and copyright law with IBM; chief consultant to the Assistant Attorney General for Antitrust in the Department of Justice's investigations into IBM, Computer Associates and Microsoft; principal technical consultant to the States' Attorneys General in their antitrust case against Microsoft (which led to a successful verdict); and the principal consultant to California (and other non-Settling States) in their successful litigation to extend the relief over the Microsoft-DOJ Settlement. In addition to assisting in the harmonization of E.U. copyright law for software ("The Software Directive"), I was the principal consultant to industry petitioners and then to the European Commission in its successful anti-competitive suit against Microsoft's abuse of dominant position in PC operating systems and server operating systems. I

also served as the principal investigator in Microsoft's efforts to comply with the EU Court's interface documentation requirements, resulting in a fine of more than \$2 billion. A copy of my curriculum vitae is attached hereto.

3. I have been asked by counsel for Defendants International Business Machines Corp. ("IBM") and Red Hat, Inc. ("Red Hat") (collectively, "Defendants") to address the technical issues raised in the letter brief submitted by Plaintiff Xinuos, Inc. ("Xinuos") to the Court on October 9, 2024. ECF No. 217. I have also been asked to address certain statements made in the Declaration of Ronald Schnell in Support of Plaintiff Xinuos, Inc.'s Letter Brief Regarding Request to Review Defendants' Source Code. ECF No. 217-1.

4. I understand that Xinuos contends it requires access to Defendants' source code to show: (1) "whether Defendants have created and/or reinforced an 'applications barrier to entry'"; (2) "whether Defendants have created and/or reinforced a 'hardware barrier to entry'"; and (3) "how IBM and Red Hat foreclosed market rivals from access to potential customers".

5. Boiled down, Xinuos claims that it needs source code to show that changes were made to Defendants' respective server operating systems ("OSes") such that software applications and hardware drivers compatible with Red Hat's server OS are also compatible with IBM's server OSes, and vice versa.

6. That is incorrect. Source code is not required to investigate such a claim.

**A. Server Operating Systems and APIs**

7. I understand that Xinuos has made certain allegations about the server OSes offered by Defendants and Defendants' conduct in the alleged "paid Unix/Linux server operating system market". UNIX was initially developed in the late 1960s and early 1970s by Bell Labs. Subsequently, many different server OS vendors have developed and offered different implementations of UNIX-based server OSes. Linux is an open source, community developed

operating system that was designed to be largely compatible with UNIX, making transition between the two operating systems relatively easy. Today, there are many different Linux distributions, all of which are open source. IBM offers a UNIX server OS, called AIX for Power, and Red Hat offers a Linux server OS, called Red Hat Enterprise Linux (“RHEL”).

8. A server operating system is an operating system that is designed to run specifically on server computers. Server computers are different from personal computers (“PCs”) in the software they run and the purposes they fulfill in an enterprise. Servers also typically differ from PCs in terms of overall capacity: with more disk space, faster and more processors, more memory, higher network bandwidth, and hopefully more security and better administrative tools.

9. A server OS can be deployed on specific types of computer systems, and only those systems. Server OS vendors may offer different versions of their products for different hardware platforms. The availability of a server OS on different hardware platforms has multiple benefits for the vendor as well as for customers. Customers can move between different hardware platforms using the same OS, allowing them to select faster or cheaper hardware while minimizing conversion costs. Vendors benefit from making their software available on multiple hardware platforms by being able to target different market segments and different price points.

10. Application Programming Interfaces (“APIs”) define the rules by which an application communicates with another piece of software, such as a server OS, to request or receive the services that the OS provides. APIs are everywhere. They are present in operating systems, web services, networking protocols, database software, and more. APIs are a means of interfacing between two separate pieces of software. There are other interfaces that define how

to request, receive and control hardware devices in a computer system. These interfaces are typically provided and published by the OS vendor.

11. Each server OS has its own set of APIs, and the server OS vendor publishes such APIs to users, prospective customers and application developers. In the case of Linux and UNIX, the bulk of the APIs are established in a common standard called the Single Unix Specification (“SUS”). Standards like SUS, POSIX, ELF and others emerged starting in the 1980s in response to demand from both application developers and customers for software applications that could be used on multiple server OSes (from different vendors) without substantially reimplementing the applications, *i.e.*, for cross-compatible applications. The documentation a vendor publishes about its server OS typically explains which standard APIs the OS complies with and which it does not,<sup>1</sup> including the incompatibilities or differences between the APIs for that particular server OS and the APIs of the industry standard interfaces. The documentation also explains differences in the expected behavior identified in the standard.

12. A server OS may also provide additional APIs that may be important to its target customers. For example, a server OS targeting the financial industry might offer additional, leading edge cryptographic or higher security APIs. Server OS vendors publish the APIs so that developers and manufacturers can create applications and drivers compatible with the server OS that can use those APIs. For example, IBM publishes APIs for AIX,<sup>2</sup> and for its other server OSes, z/OS and IBM i. Red Hat publishes APIs for Red Hat Enterprise Linux (“RHEL”).

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<sup>1</sup> In addition, several tools exist that can test for incompatibilities between server OSes using the customer’s own workloads.

<sup>2</sup> See, e.g., <http://public.dhe.ibm.com/systems/power/docs/aix/53/basetrfl.pdf> (comprehensive technical manual published on October 18, 2002, for AIX 5L Version 5.3).

13. Therefore, whether and to what extent IBM's and Red Hat's server OSes are cross-compatible with the same software applications and device drivers can be identified from the documentation for the APIs. The API documentation would also allow the extent of the cross-compatible features to be adduced. If aspects of an API for IBM's server OSes are cross-compatible only with the corresponding aspects for Red Hat's server OS, but not those for rival OSes, that would be evident from a review of the rival OS's API documentation compared to Red Hat's or IBM's.

14. If an application developer wants to understand whether an application is cross-compatible with both RHEL and AIX (for example), it would look at those server OSes' respective APIs, as they are published by IBM and Red Hat.

15. An application developer would not look at the source code for RHEL and AIX. In fact, they typically do not look at the source code for server OSes for several reasons. To start, the source code for a server OS consists of tens of millions of lines of code, which would be time consuming to navigate and requires skills and expertise not normally present in non-OS developers.<sup>3</sup> It would not necessarily be clear what is or is not an API from an examination of the source code, nor would it be apparent if the code being examined is vestigial or deprecated (*i.e.*, code that is no longer useful or will no longer be useful, but has not yet been removed). Further, it might be that the code being examined is intended only as a private interface between internal parts of the operating system itself. Finally, such information as might be needed by an

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<sup>3</sup> Different skill sets and different knowledge bases are required to program operating systems and application programs.

application developer is readily available from the publicly available documentation or from the user community.<sup>4</sup>

16. Likewise, a customer or end-user of AIX, interested in understanding whether it can run efficiently the enterprise applications the customer needs to operate its business, would refer to publicly available documentation for AIX released by IBM, not the source code.

17. In fact, I understand that IBM does not disclose the vast majority of the source code for any of its server OSes to developers or customers.

18. As the documentation for each version (and each release) of a server OS is maintained separately, any changes to the APIs of interest can be determined by comparing documentation for different versions of the OS. Source code is not needed to understand the changes.

**B. The Alleged Cross-Compatibility and “Barriers to Entry”**

19. As an initial matter, it is not the case that “apps originally written for IBM’s OSs also operate on Red Hat’s OS, and vice versa”, nor that “hardware originally built for one of the operating systems can also work for the other”, as XinuOS alleges. Applications that run on IBM’s server OSes do not run on Red Hat’s server OS without a significant undertaking to port and re-compile the application, and vice versa.

20. More importantly, server OS source code is not necessary to understand whether an application can run on both IBM’s server OSes and Red Hat’s server OS. Application developers publish documentation about their applications. The documentation identifies all server OS platforms that are intended to be compatible with that application. This is necessary

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<sup>4</sup> Information about APIs in particular, and interoperability/compatibility is widely available on special interest forums on the Internet.

because developers must disclose to potential customers what server OSes can be used with the application; the more OSes the better. I am not aware of any developers that do not publicly disclose the server OS platforms that are compatible with their applications.

21. Documentation provided by an application developer is sufficient to determine whether an application is compatible with IBM's server OSes, Red Hat's server OS or both. The same documentation will explain whether an application is compatible (or not) with competing server OSes. Thus, the existence of an application's cross-compatibility can be identified by the documentation provided by the application developer.

22. Like application developers, server hardware manufacturers publish documentation indicating what server OSes are compatible with their hardware,<sup>5</sup> because customers and potential customers may have a preferred server OS and want to know whether their preferred server OS is compatible with the manufacturer's hardware. Whether there is hardware cross-compatibility can therefore be determined from documentation published by server manufacturers.

### **C. The Alleged "Need" for Source Code**

23. I understand that Mr. Schnell contends that "technical overview documents and schematics are far more general than the details in the source code itself". While Mr. Schnell is correct as a general matter, he does not identify any details not present in public materials that are necessary to evaluate the cross-compatibility alleged by XinuOS. That information, as explained above, can be readily identified in the documented APIs.

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<sup>5</sup> IBM, for example, lists the range of server OSes compatible with its hardware. See <https://www.ibm.com/docs/en/linux-on-systems?topic=lpo-linux-distributions-virtualization-options-power8-power9-linux-power-systems>.



24. Mr. Schnell also claims that certain types of “technical documents may reveal design *aspirations* at a single point in time, but programmers often make or change their decisions about how products should be configured”. I understand that Defendants have offered to produce documents, such as product release notes, that, combined with published API documentation, describe what features and changes were actually implemented. Such documents do not contain design aspirations that were not implemented; they are created after the fact to memorialize the decisions and changes that were made.

25. Finally, I understand that Mr. Schnell contends that “making source code available in litigation is commonplace and a relatively straightforward process”. Based on my extensive experience, this is not an accurate portrayal. In fact, there is a wide range of reactions to source code disclosure requests, prophylactic measures and personnel limitations imposed by the courts in response to legitimate concerns by the owners of the source code. In my experience, Xinuos’ request for the full code repositories for multiple products, spanning multiple decades, is extraordinary. I am not aware of any case in which the volume and breadth of code Xinuos is requesting has been produced.

26. I note that Mr. Schnell uses his experience in a prior litigation, during which he reviewed source code developed by the IBM Research Center, to support his claims regarding burden. I would note that this code was not part of any of the products being sought by Xinuos, nor was its development subject to or under the aegis of the standards and practices in place in IBM’s *commercial* development facilities.

27. I declare under penalty of perjury that the foregoing is true and correct. Executed on October 16, 2024, in Tucson, Arizona.

A handwritten signature in black ink, appearing to read 'Ronald Alepin', is written over a horizontal line.

Ronald Alepin

***Ronald S. Alepin***  
Los Altos Systems Research, Inc.

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**P R O F E S S I O N A L   E X P E R I E N C E**

**President of Los Altos Systems Research ("LASR")**

1981 – Present

I provide consulting services at the intersection of Information Technology and the law through my technology consultancy, Los Altos Systems Research.

LASR was originally conceived as a firm to assist companies in the computer industry leveraging my experience and expertise in the development of advanced operating systems and large mainframe computing systems. My practice evolved in the late of 1980's to address the emerging need on the part of lawyers, executives and governmental policy makers to understand both the bits and bytes of high tech as well as its internal and external dynamics.

Today, I have several decades of hands-on experience in the areas of the design and development of computer systems, including hardware and software – from mainframes to microchips. I have held positions from developer, architect, product manager to vice-president in the information technology ("IT") industry. A substantial portion of my career has been spent working with attorneys, industry participants, governmental officials and policy makers at the cutting edge of the law and technology and can claim some measure of credit for some important changes in the way Information Technology is protected and regulated.

My clients have included many of the most well-known global software and hardware companies, IT service-providers as well governmental agencies and professional services firms.

***Ronald S. Alepin***  
Los Altos Systems Research, Inc.

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Representative assignments involving computer hardware, peripheral and semiconductor design have included:

- analysis of place and route semiconductor layout design
- provably correct semiconductor design
- analysis of support databases for PC purchasers customer complaints (“bathtub” Failure analysis);
- assessment of RAM memory subsystem failures (resulting in a recall of more than \$100M worth of memory chips);
- evaluation of Liion battery failures (explosions) in camera systems;
- several projects involving the performance measurement & benchmarking of PC systems;
- examination of premature failure of PC mechanical components failures (hinges, batteries, power supply cables);
- anticompetitive conduct in the PC CPU industry;
- Flash RAM and SRAM performance and usage;
- Thermal design for personal computers.
- Patents on the design of CPUs with multimedia capabilities. :
- analysis of disk platter verification systems for disk drive manufacturers;

Some of these engagements involved litigation, some for risk assessment and others for business purposes.

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I have been involved in software projects on all of the important platforms including IBM Mainframes, “Mini-computers” (e.g., DEC, HP), microprocessors (PCs), Servers (x86-based using Windows NT/Server, Linux), networking devices, mobile phones (IOS/Android), and specialized processors (IoT, I/O devices).

My work has involved all aspects of the development life cycle from opportunity/needs assessment, development, development methodology, team management, testing, commercialization, marketing and sales to post mortems and performance/project reviews.

In the context of litigation and internal risk review, I designed and developed the first (to my knowledge) forensic in-place disk copying software for evidence capture and preservation. I designed several of the tools and organized and managed the largest software comparison project involving more than 25 engineers and tens of millions of lines of source code. I have conducted ex-post software project feasibility studies, public domain origination investigations, User-Interface design comparisons, open source licensing compliance reviews among many other assignments.

Representative projects involving software have included:

- an analysis of a 2,000+ patent portfolio for cross-licensing
- analysis of self-driving automotive software
- analysis of social networking software
- analysis of commercial and open source virtual machine software
- evaluation of social networking software and associated website
- analysis of UI design on user preferences for search engine results (including click-through rates analysis);
- an evaluation of browser measurement methodology (including analysis of website traffic);
- evaluation of the development process and viability of a real estate web portal
- assessment of the viability of reverse engineering networking communications protocols for workgroup server interoperability;
- analysis of open source development and compliance (including networking and systems management components);
- establishment of a clean room software development process for a large multinational corporation;
- development and application of benchmarking methodologies for personal computer systems hardware and software performance;

- examination of potential copyright infringement in high-end digital video editing software;
- evaluation of software development methodologies, cost estimations and delivery for large, complex projects including social networking websites and multinational financial information web portals;
- a business evaluation of the enterprise licensing provisions of computer software license agreements
- a technical assessment of server communications protocols,
- analysis of mainframe operating system software;
- evaluation of the business and technology prospects in a leveraged buy-out
- a review and analysis of patents and other intellectual property rights asserted of these protocols;
- an analysis of a 650+ patent portfolio for possible infringement
- an analysis of software patents (more than 250), and the design recovery and source code comparison of multimedia authoring software.

Representative engagements include:

- IBM U.K. v. LzLabs et al.
- Waymo v. Uber
- Softketeers v. Regal West
- U.S. Department of the Treasury v. [Confidential]
- Grindr v. Kunlun
- Merion Capital v. BMC
- Software Conservancy v. VMware
- Phoenix Technologies v. VMware
- FairSearch Intervention in EU Proceedings v. Google
- Attachmate v. Covance
- Quest Software v. DirecTV
- IBM v. Neon Software
- First American v. RE3W
- Novell v. Microsoft
- Toshiba (several product claims)
- Abraxis v. Sabyent
- Class Action Proceedings v. Intel; v. Microsoft

## **NARRATIVE**

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I began my professional career designing and developing mainframe operating system software, authoring or co-authoring several products for use on IBM System/3xx hardware. I continued to develop mainframe software products for Amdahl, Boole & Babbage and other large-scale computer companies. I served as Fujitsu's expert for 10 years in its dispute over mainframe software with IBM. I was retained by IBM to serve as its expert in mainframe software litigation.

Over time I have expanded my practice to include the intersection of technology and the law. Beyond my engagement as Technical Advisor to Morrison & Foerster, one of the country's leading law firms, described below, I have been retained as an expert in several computer technology-centered trade secret, copyright, patent, antitrust, and class action disputes including Apple, Calix Networks, Compaq, Covance, DirecTV, Fujitsu, IBM, Iconnix, Intel, Microsoft, MicroUnity, Novell, Oculus, Opera, Oracle, Phase Metrics, RealNetworks, Sun Microsystems, Toshiba, Uber and VMware. I have conducted more than a dozen large scale software reviews covering issues including infringement, licensing, development process, open source licensing, and valuations.

I was retained by the CCIA (Computer and Communications Industry Association), the SIIA (Software and Information Industry Association) and ECIS (the European Committee on Interoperable Systems whose principle members include IBM, Sun, Redhat and Oracle) as their computer and software industry expert in the proceedings against Microsoft in Europe. I was retained by RealNetworks in the European and Korean proceedings as a technical expert evaluating the bundling of Media Players. I was retained by Oracle to evaluate the business and technical issues presented by Microsoft's Workgroup Server Protocol Program, "WSPP" which involved several in-depth reviews of Microsoft's interoperability information.

I have been involved in public policy issues touching the computer industry for twenty years, including active roles in the EU Software Directive and the IBM Undertaking. I have specialized in the crucial role of interoperability in the IT industry since 1978. I was retained by the Assistant Attorney General for Antitrust at the United State Department of Justice as an expert in the computer industry and technology and also by the State Attorneys General during their investigation and preparation for trial in the liability phase of the present case. In 2007, I was retained as an expert in by the "Non-Settling" States Attorneys General in their successful motion to extend the duration of certain provisions of the Remedies Decree issued in the U.S. DOJ v. Microsoft.

I have appeared before the European Commission and its various departments more than two dozen times over the past twenty years, most recently in October, 2004 to

testify at the Microsoft Interim Measures hearings in Luxembourg and in December of 2005 in connection with a technical evaluation of Microsoft's compliance under the Commission's Decision. In 1988 and 1989, I worked with the Commission during its drafting of the Software Directive to develop provisions that would balance intellectual property protection with competition. From 1980 to 1992, I appeared numerous times before the Competition Directorate at their request in conjunction with their investigation of IBM and subsequently with regard to the operation of IBM's Undertaking (IBM's settlement agreement under which it was required to supply interface information to competitors).

During the 1980s and 90s, I was retained as an expert by the second largest computer manufacturer to evaluate the hardware design specifications for mainframe computer systems. I was retained as an expert for OEMs on several cases over the hardware design of PCs. I was an expert in the MicroUnity case against Intel over multimedia instructions included in the Intel microprocessors.

I am acknowledged in two books about computer software, competition and copyright law.

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**E X T E N D E D   E N G A G E M E N T S**

**Technical Advisor, Morrison & Foerster**

1991 – 2009

I worked with Morrison & Foerster's Intellectual Property/Technology Transactions practice group. My role was to work with the group's attorneys and its clients in litigation, patent, contractual, licensing and M&A matters involving computer technology.

**CTO & VP, Strategic Planning, Fujitsu Software**

2002 – 2006

As a consultant, I was retained to act as Vice-President, Strategic Planning and Chief Technology Officer for Fujitsu Software Corporation where I assisted in the development of strategies, products and partnerships, most recently on the effort to globalize Fujitsu's grid and SOA computing initiatives.

**Chief Technology Consultant, Fujitsu Limited**

1996 – 2002

As Chief Technology Consultant to Fujitsu Limited, I assisted the world's third largest computer company in developing strategies, products and partnerships, including its relationships with Intel and IBM as well as evaluating potential acquisitions and technology licenses.

During my engagement with Fujitsu, I was selected to represent the company on the Board of Eclipse, the open source development tools community.

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**General Manager, Enterprise Products Division, Fujitsu Software**

2000 – 2002

I was General Manager of the Enterprise Products Division for Fujitsu Software Corporation., responsible for the development, worldwide sales, support and marketing of Fujitsu's *i-Flow*, Java-based business process management middleware software. I also had P&L responsibility for Fujitsu's J2EE-based Interstage Application Platform Suite in North America.

I conceived, co-designed and developed a software system for the remote monitoring of the performance and security of websites including streaming media and transaction-based sites using a distributed network of computers located around the country.

As the general manager, I negotiated contracts involving software to be included as part of products to be resold by licensees. I also evaluated technology and software product purchases.

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**Principal Consultant to the States' Attorneys General**

1998, 2007

I was retained directly by the States' Attorneys General as their chief technical and industry consultant in the investigation of Microsoft and the preparation for trial. The resulting proceedings before Judge Jackson led to a finding of liability. Subsequently, I was retained as an expert in the States' Attorney Generals successful motion to extend the remedy over Microsoft beyond five years.

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**Party Chief Technical Representative**

1985 – 1997

I served as the chief technical advisor to Morrison & Foerster's attorneys in their representation of Fujitsu in its multi-billion dollar antitrust and copyright dispute with IBM over mainframe computer software. My assignments included assessments of both technical and business issues. I conducted the largest ever analysis of software for copyright infringement – designing the study, directing the efforts of more than 30 engineers and six consultants. The project reviewed more than 10 million lines of source code in more than 30 programs, including operating systems, language compilers, networking software and data management.

The result of the proceedings was the creation of an intellectual property licensing and transfer regime (which lasted eight years) with a comprehensive set of rules and procedures for the extraction of information necessary to achieve interoperability. I was responsible for the technical content of the provisions governing the scope of information necessary to achieve interoperability and the rules governing the operation of the regime. I represented Fujitsu in any disputes concerning the interpretation of these provisions and their applicability to technical specifications sought by either party.

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**Principal Consultant to the U.S. Department of Justice, Antitrust Division** 1994 – 1996

I was retained directly by the Assistant Attorney General for Antitrust to assist in an investigation of certain aspects of the software industry. In this capacity I was responsible for providing the Assistant Attorney General, the Special Trial Counsels and the Department with assessments of the industry and for evaluating the technical and business evidence generated by the Department's investigations. In particular, I was the technical and industry expert in the 1993 Microsoft investigation which led to the 1994 Consent Decree; the Tunney Act proceedings before Judge Sporkin, the Microsoft-Intuit acquisition, and the Windows 95 MSN bundling and related investigations.

Separately I was retained by the Antitrust Division to assist in the evaluation of the competitive effects of certain mergers in the software industry. In particular, I was asked to assist in the Department's review of the impact of Computer Associates' acquisition of Legent on the market for computer systems management and performance measurement software.

I also consulted with the Division in its evaluation of the effects of IBM's 1996 suit to terminate the 1956 Consent Decree.

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## **History**

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### **Amdahl Corporation**

1978 – 1981

Responsibilities included Processor Product Marketing Manager for Amdahl's 5860 family of IBM System 370 compatible processors; Manager, Benchmarks, Performance Evaluation and Competitive Analysis; and Principal Programmer. I authored and co-authored three Amdahl software products.

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### **L'Industrielle Services Techniques, Inc. ("IST")**

1975 – 1978

Director of Software Development for IST, a major service bureau using IBM mainframe equipment.

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### **Société de Mathématiques Appliquées ("SMA")**

1974 – 1975

Manager Software Development for SMA, a major service bureau using IBM mainframes and CDC 6600 computers.

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### **Bell Canada**

1971 – 1974

Systems Programmer for Bell Canada.

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## E D U C A T I O N

### **McGill University**

1967 -- 1971

Four years in Honors Economics and Econometrics

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## O R G A N I Z A T I O N S

### **Memberships**

Association for Computing Machinery (“ACM”) Ret.

Institute of Electrical and Electronic Engineers (“IEEE”) Ret.

### **Boards**

Vice-Chairman for the Americas, 2001/2004,  
Workflow Management Coalition (“WfMC”)

Board of Directors, Eclipse.org

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